

Ecological Disturbance Monitoring Using Landsat Time Series Data

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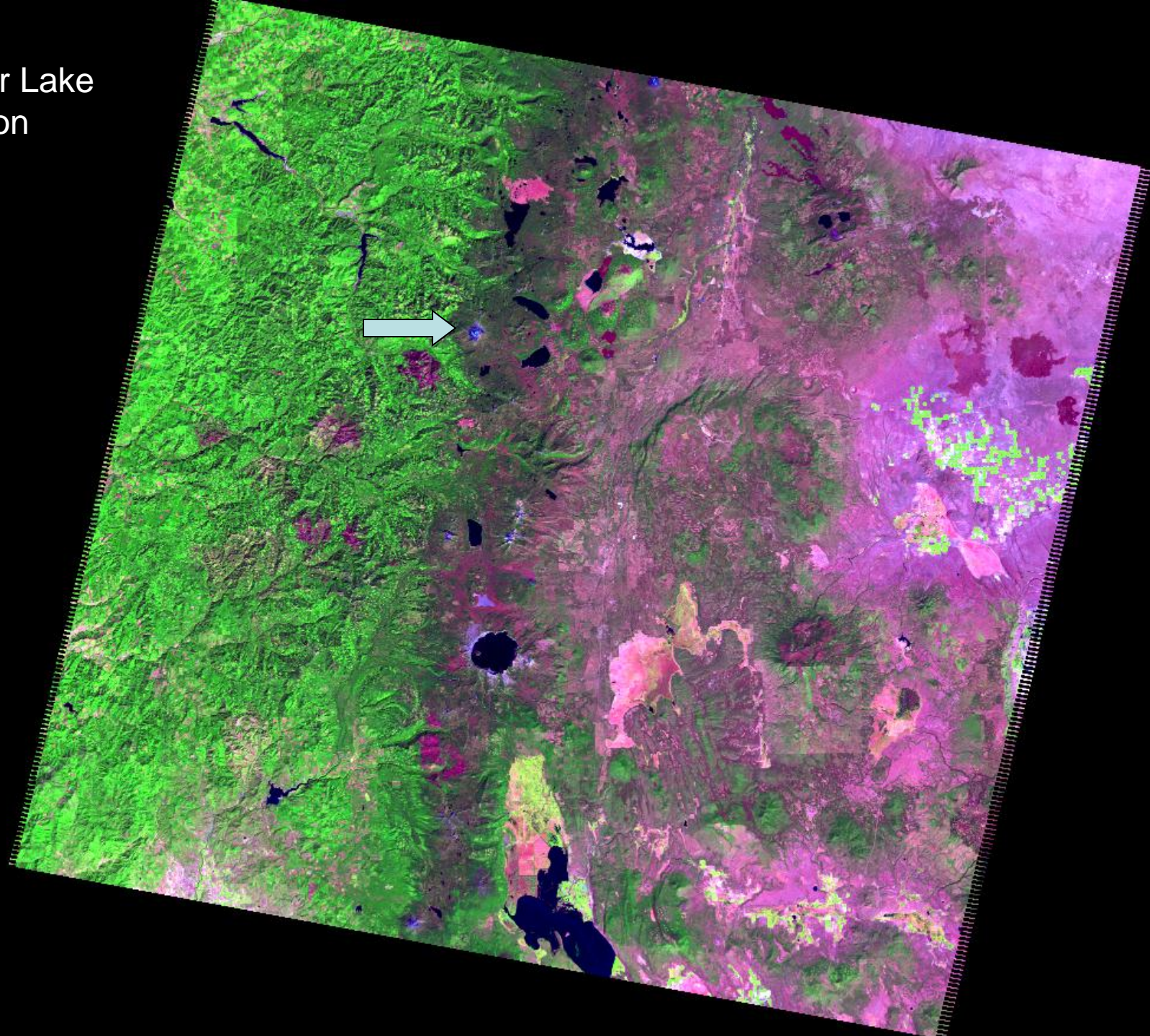
Short Term Plans (next six months)

- “Improving national shrub and grass fuel maps using remotely sensed data and biogeochemical modeling to support fire risk assessments”
 - NASA funded feasibility study
 - Study region is Owyhee Upland, Idaho
 - Goal is to link time series remote sensing data (Landsat, WELD, MODIS) with climate data to improve fire assessment and predictions in rangeland ecosystems
- Participation in Landscape Change Monitoring System (LCMS) activities
 - Will involve comparing results of the various time-series change detection approaches (e.g. VCT, Landtrendr, AGECOLA) for select Landsat path/rows

More short term plans

- Continue assessing gradual change data in conjunction with Daymet data. Current test areas are located western Washington, western Texas and Arizona
 - Objectives are to understand impact of climate change on spectral and ecological changes
- Once we have Landsat 8 data, will need to evaluate and integrate with Landsat 5 and 7 data in keeping with the Landsat time series motif
- Continuation of assessment of NDVI trends in mountain areas, especially in the western US (see next slides for example)

Crater Lake
Oregon

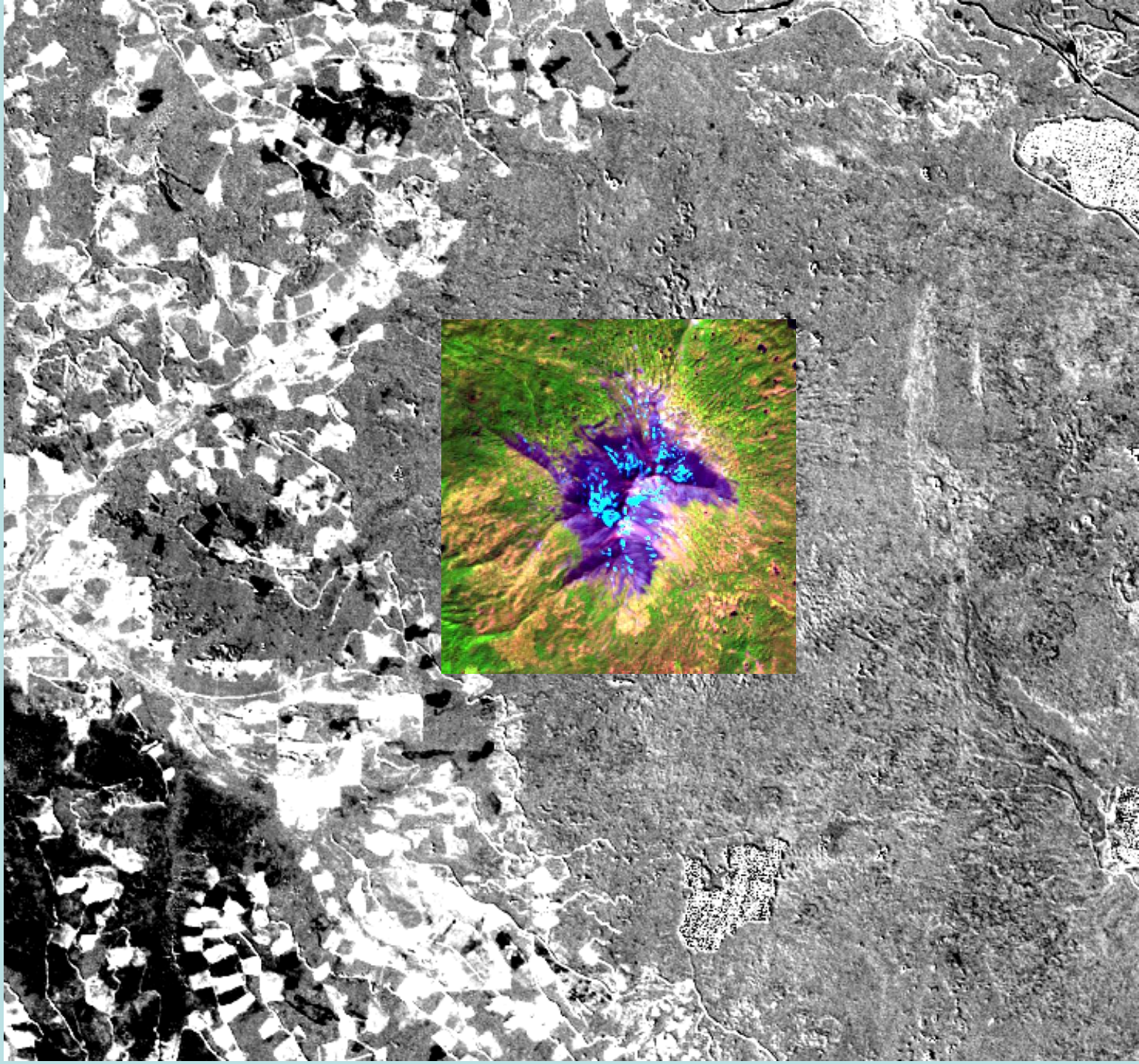


Diamond Peak
Oregon
NDVI Slope
25 Years (1985
through 2011)

Color image is
Landsat B 543
false color
composite (high
elevation
portion of the
mountain)
on the grey-tone
trend data set.

Dark (black) =
decreasing
trends of
greenness

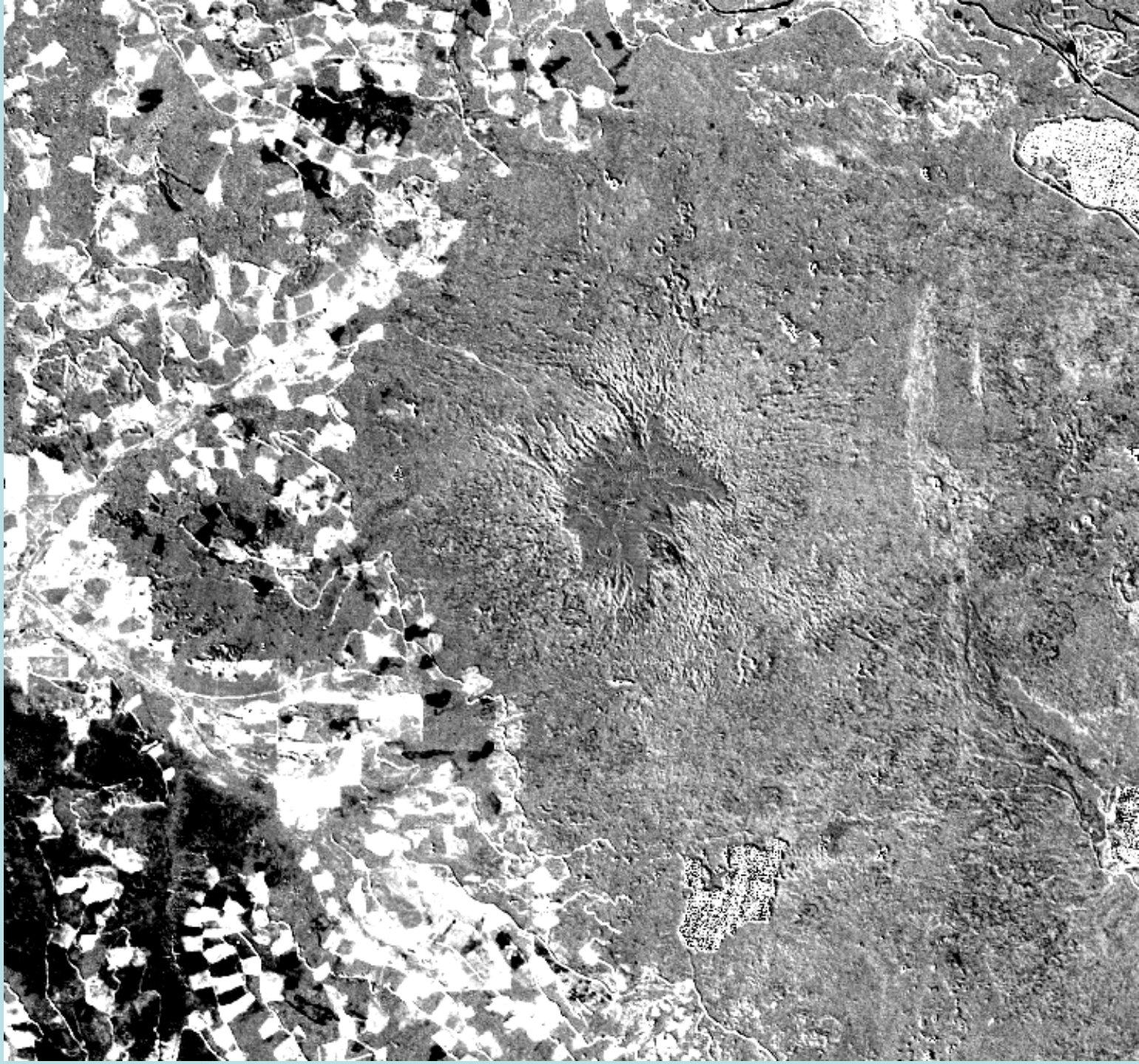
Bright (white) =
increasing
trends of
greenness



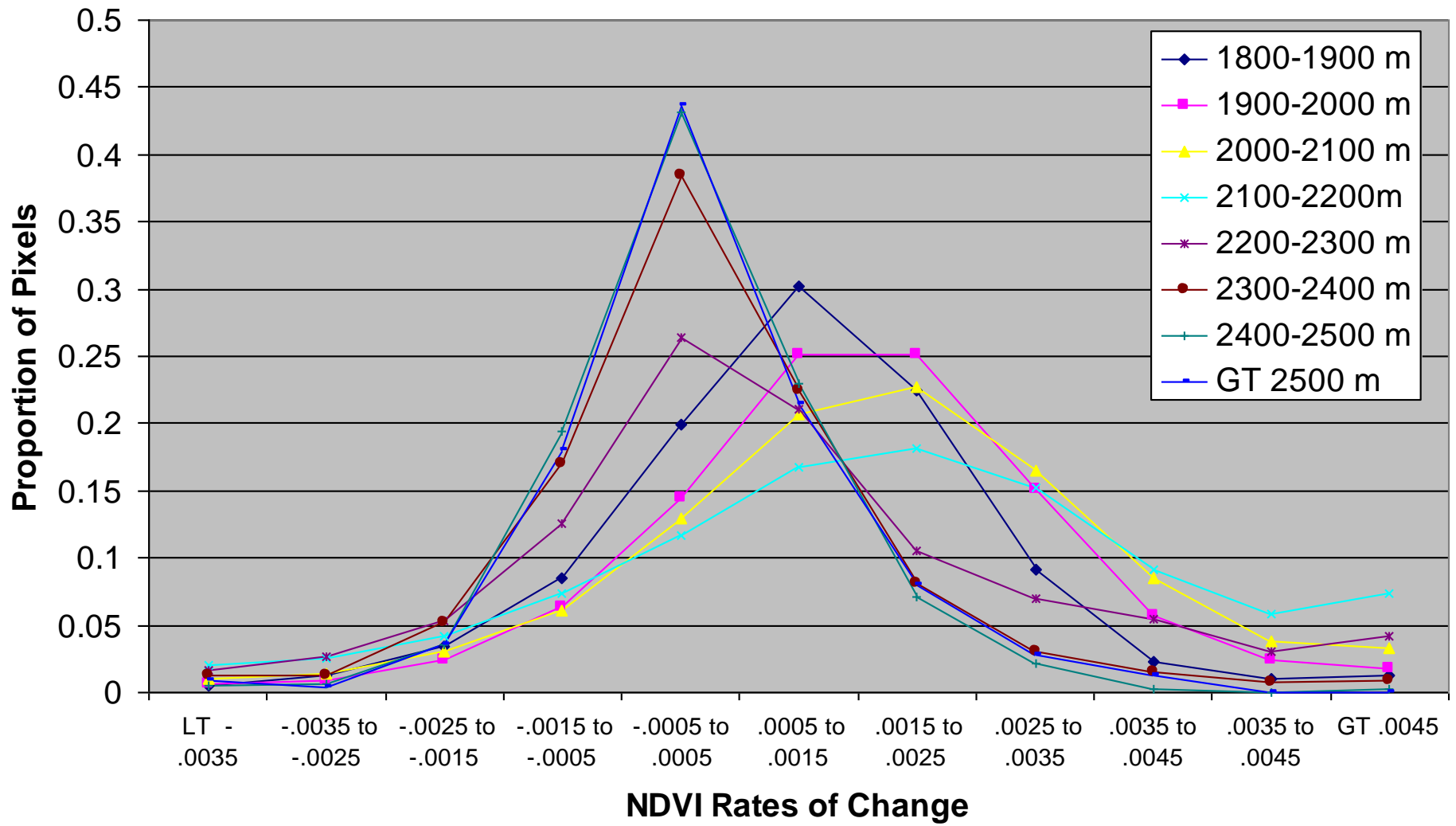
Diamond Peak
Oregon
NDVI Slope
25 Years (1985
through 2011)

Bright =
gradual trend
in increasing
greenness

Note increased
greenness is
in “ring” at the
transition zone
between high
elevation
conifer forest
and alpine
zone



NDVI Trends Based on Elevation; Diamond Peak, Oregon



Different elevation ranges of the mountain are statistically different in terms of Rates of NDVI Change. The areas showing the highest Rates of Change (increased greenness) are located from 1900-2200 meters.